

NOTE ON THE PRESENCE OF A
LATERAL SPINE IN THE EGGS OF
SCHISTOSOMA JAPONICUM,

BY

ROBERT T. LEIPER, M.B., F.Z.S.,

*Helminthologist to the London School of Tropical Medicine and to
The Seamen's Hospital Society.*

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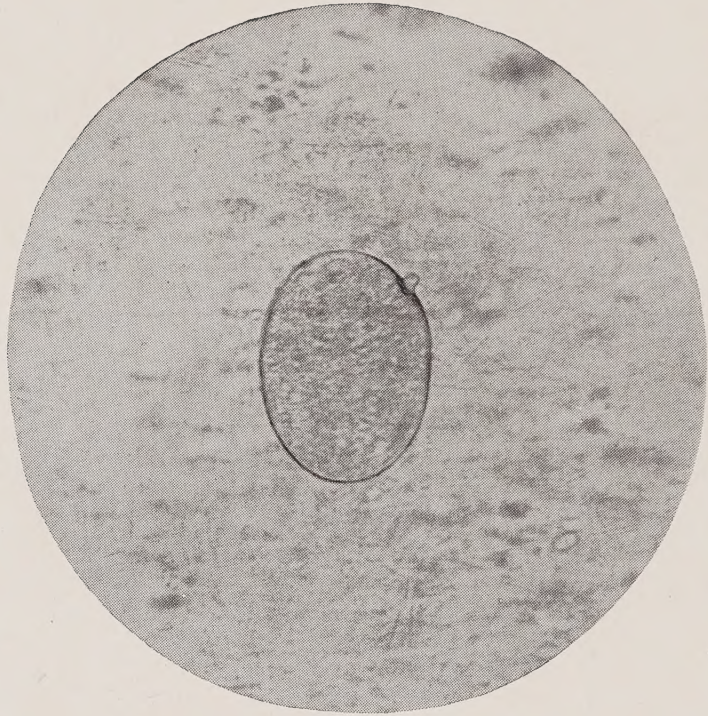
(Paper read at a Meeting of the Society of Tropical Medicine and
Hygiene, Friday, February 17th, 1911).

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Egg of *Schistosoma japonicum*, shewing lateral spine.
 × 250 diams.

Microphoto by Dr. J. J. Bell.



R.T.L. del.

Camera lucida drawing of an egg of *Schistosoma japonicum*,
 shewing a lateral spine.

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Since the discovery of *Schistosoma japonicum* as a cause of bilharziasis in man in the Far East, by KATSURADA and CATTO in 1904, the various writers on the structure of the parasite and on the pathology of this disease have been unanimous in emphasising the *absence* of a spine in the egg of this species as a distinctive character.

Owing to the absence of special characters in the shell, the eggs were mistaken at first for coccidia, while CATTO suggested that the close resemblance in size, shape and general appearance of the eggs to those of *Ancylostomum duodenale*, probably accounted for the fact that they had not been recognised previously in the course of the routine examinations of stools by medical men in the East.

Recently, Dr. SKINNER, of Hankow, sent to me for confirmatory examination a small quantity of fæces from a dog that had died of symptoms identical with those of advanced Asiatic bilharziasis in man. In the fæces and in scrapings of the intestinal wall, Dr. SKINNER had found a large number of ova apparently of *Schistosoma japonicum*, but at the post-mortem examination he had been unable to discover any adult worms in the portal system.

The material had been mixed with a little Farrant Medium, and the eggs were fairly transparent. This enabled me to notice almost at first glance that although the eggs had the size, shape and general appearance of *Schistosoma japonicum*, there was present a curious little nipple-like knob or spine situated a short distance from one of the poles of each egg. Further search revealed the presence of a similar and similarly situated spine in all the eggs in the preparation. The questions then arose: (a) Is this spined egg characteristic of a new species of *Schistosoma*? or (b) Is it an unobserved character of *Schistosoma japonicum* eggs? or (c) Is it an instance of abnormal development in the eggs of *Schistosoma japonicum*, similar to the lateral spined egg that, Professor Looss maintains, occurs under certain circumstances in *Schistosoma hamatobium*?

An examination of CATTO's original specimens, of part of the material upon which Dr. TSUCHIYA, of Tokio, based his monograph on *Schistosoma japonicum*, and of portions of intestine from two other human cases, from China, presented through Dr. SANDWITH and Dr. DANIELS to the London School of Tropical Medicine, has enabled me to confirm the presence of a spine in four cases of *Schistosoma japonicum* in man.

In some instances the spine at first appeared to be absent, but by careful rolling of the egg under the cover glass, the spine was ultimately brought into view in all these cases, so that as the result of an examination of about fifty eggs from seven different cases, four from man and three from dogs, I have come to the conclusion that the schistosome found in the dog is of the same species as that found in man, and that the *Schistosoma japonicum* egg is characterised normally by the presence of a small knob-like cuticular spine.

In many of the ova the spine appears to rise from the centre of a slight navel-like depression in the egg-shell. The base of

attachment is thickened in all, and spreads out upon the shell for a short distance in a manner somewhat similar to the attachment of a thorn to the stem of a rose.

This small observation seems worthy of record, not only on account of the importance of the ova of helminths found in the fæces in the diagnosis of the disease, but also because of the suggestive light it throws upon the value as a specific character of the lateral spine sometimes found in the eggs from cases of African bilharziasis, upon which there has recently been such a warm controversy.



